

AMENDMENTS TO THE CLAIMS

- 1) (Currently amended) A device for checking a ~~the~~ position of a spindle in a machine tool presenting a structure serving to support the spindle and means for setting by which the spindle is set in motion along three axes X, Y, and Z within a predetermined machining zone, comprising:
- a plurality of means, located externally of the machine tool, and capable of emitting electromagnetic signals;
- means, installed on the spindle, and capable of receiving electromagnetic signals;
- a master control unit, connected on an the output side to the means for setting by which the spindle is set in motion along the axes, and incorporating means by which to process and transmit for processing and transmitting signals indicating the distance between each of the emitting means and the receiving means; and
- means able to identify for identifying the position of the spindle on the basis of the signals indicating the distances between the emitting and receiving means.

- 2) (Currently amended) A device as in claim 1, wherein each of the means for emitting electromagnetic signals is associated with one of a corresponding plurality of respective time measuring means synchronized one with another.

3) (Currently amended) A device as claim 2, wherein the means by which to process and transmit for processing and transmitting signals indicating the distance between each of the emitting means and the receiving means are able to determine the selfsame distance on the basis of the time taken by the electromagnetic signal to travel between the emitting means and the receiving means.

4) (Currently amended) A device as in claim 1, wherein the spindle is set in motion within the machining zone, by relative means, about two further polar axes A and C, and means by which to detect for detecting the orientation of the polar axes A and C are connected to processing means connected in turn on an the output side to the master control unit.

5) (Original) A device as in claim 4, wherein the detection means comprise rotary encoders.

6) (Original) A device as in claim 4, wherein the detection means comprise gyroscope devices.

7) (Currently amended) A device as in claim 1, wherein the means capable of for emitting electromagnetic signals includes consist in emitters of electromagnetic waves in a the radio-frequency part of the spectrum, and the receiving means includes consist in a receiving antenna.

8) (Currently amended) A device as in claim 1, wherein the means capable of ~~for emitting electromagnetic signals~~ include consist in transmitters of radar waves, and the receiving means includes ~~consist in~~ a radar target.

9) (Currently amended) A device as in claim 1, wherein the means capable of ~~for emitting electromagnetic signals~~ include consist in transmitters of laser signals, and the receiving means includes ~~consist in~~ a reflective target.

10) (Currently amended) A device as in claim 1, installed in a system including a plurality of machine tools and relative spindles, wherein the means ~~capable of~~ ~~for~~ emitting electromagnetic signals and the master control unit are embodied as a single entity operating in conjunction with each of the receiving means associated with the single spindles.

11) (Currently amended) A device as in claim 1, installed in a machine tool of which the predetermined machining zone is occupied by a fixture serving to support a part for machining, wherein the fixture comprises at least one set of receiving means able to pick for picking up the electromagnetic signals from the emitting means and connected to means ~~capable of~~ ~~for~~ processing and outputting signals indicating the distance between each of the emitting means and the receiving means.

12) (Previously presented) A device as in claim 1, wherein the method of computation utilized by the processing means is that of triangulation.

13) (Currently amended) A device as in claim 2, wherein the means capable of for emitting electromagnetic signals include ~~consist in~~ emitters of electromagnetic waves in the radio-frequency part of the spectrum, and the receiving means includes ~~consist in~~a receiving antenna.

14) (Currently amended) A device as in claim 3, wherein the means capable of for emitting electromagnetic signals include ~~consist in~~ emitters of electromagnetic waves in the radio-frequency part of the spectrum, and the receiving means includes ~~consist in~~a receiving antenna.

15) (Currently amended) A device as in claim 4, wherein the means capable of for emitting electromagnetic signals include ~~consist in~~ emitters of electromagnetic waves in the radio-frequency part of the spectrum, and the receiving means includes ~~consist in~~a receiving antenna.

16) (Currently amended) A device as in claim 5, wherein the means capable of for emitting electromagnetic signals include ~~consist in~~ emitters of electromagnetic waves in the radio-frequency part of the spectrum, and the receiving means includes ~~consist in~~a receiving antenna.

17) (Currently amended) A device as in claim 6, wherein the means capable of for emitting electromagnetic signals include ~~consist in~~ emitters of electromagnetic waves in the radio-frequency part of the spectrum, and the receiving means includes ~~consist in~~a receiving antenna.

18) (Currently amended) A device as in claim 2, wherein the means capable of for emitting electromagnetic signals include consist in transmitters of radar waves, and the receiving means includes consist in a radar target.

19) (Currently amended) A device as in claim 3, wherein the means capable of for emitting electromagnetic signals include consist in transmitters of radar waves, and the receiving means includes consist in a radar target.

20) (Currently amended) A device as in claim 4, wherein the means capable of for emitting electromagnetic signals includes consist in transmitters of radar waves, and the receiving means includes consist in a radar target.

21) (New) A device for checking the position of a spindle in a machine tool presenting a structure serving to support the spindle and means for setting the spindle in motion along three axes X, Y, and Z within a predetermined machining zone, comprising:

a plurality of means, located externally of the machine tool, for emitting electromagnetic signals;

means, installed on the spindle, for receiving electromagnetic signals;

a master control unit connected on an output side to the means for setting the spindle in motion along the axes and incorporating means for processing and transmitting signals indicating the distance between each of the emitting means and the receiving means; and

means for identifying the position of the spindle on the basis of the signals indicating the distances between the emitting and receiving means;

said device being installed in a machine tool of which the predetermined machining zone is occupied by a fixture serving to support a part for machining, wherein the fixture comprises at least one set of receiving means for picking up the electromagnetic signals from the emitting means and connected to means for processing and outputting signals indicating the distance between each of the emitting means and the receiving means.

22) (New) A device for checking the position of a part to be machined in a machine tool presenting a structure serving to support the spindle and means for setting the spindle in motion along three axes X, Y, and Z within a predetermined machining zone, comprising:

a plurality of means, located externally of the machine tool, for emitting electromagnetic signals;

a fixture serving to support the part for machining, wherein the fixture comprises at least one set of receiving means for picking up the electromagnetic signals from the emitting means and connected to means for processing and outputting signals indicating the distance between each of the emitting means and the receiving means.